

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

The Missouri Department of Natural Resources hereby issues a permit to:

Weiss Lagoon
4459 N. High Street
Jackson, MO 63755

for the construction of (described facilities):

See attached.

Permit Conditions:

See attached.

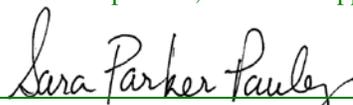
Construction of such proposed facilities shall be in accordance with the provisions of the Missouri Clean Water Law, Chapter 644, RSMo, and regulation promulgated thereunder, or this permit may be revoked by the Department of Natural Resources (Department).

As the department does not examine structural features of design or the efficiency of mechanical equipment, the issuance of this permit does not include approval of these features.

A representative of the department may inspect the work covered by this permit during construction. Issuance of a permit to operate by the department will be contingent on the work substantially adhering to the approved plans and specifications.

This permit applies only to the construction of water pollution control components; it does not apply to other environmentally regulated areas.

September 23, 2015
Effective Date


Sara Parker Pauley, Director, Department of Natural Resources

September 22, 2017
Expiration Date


John Madras, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

Weiss Lagoon will construct a new pump station with 1,822 linear feet (lf) of 3 inch force main to connect the existing Weiss Mobile Home Community WWTP, MO-0110043, to the Weiss Lagoon. The Weiss Lagoon WWTP is an existing land application system. The new pump station has two ABS Prianha M25/2 D 3 phase grinder pumps with the ability to pump 78 gallons per minute (gpm) each with a total dynamic head of 38 feet. The new force main will pump water from the pump station to the existing gravity line.

The land application site will expand from the current 4.3 acres to 10.66 acres; however that is below the existing 11.1 acres already permitted for land application. With the expansion of the acres utilized and with five zones of application, the application rate drops from the existing 60 inches per acre per year to 46.6 inches per acre per year. The permitted design flow remains 41,600 gallons per day (gpd).

II. CONSTRUCTION PERMIT CONDITIONS

The permittee is authorized to construct subject to the following conditions:

1. This construction permit does not authorize discharge.
2. All construction shall be in accordance with the plans and specifications submitted by Strickland Engineering on September 4, 2015.
3. The department must be contacted in writing prior to making any changes to the approved plans and specifications that would directly or indirectly have an impact on the capacity, flow, system layout, or reliability of the proposed wastewater treatment facilities or any design parameter that is addressed by 10 CSR 20-8, in accordance with 10 CSR 20-8.110(8).
4. State and federal law does not permit bypassing of raw wastewater; therefore steps must be taken to ensure that raw wastewater does not discharge during construction. If a sanitary sewer overflow or bypass occurs, report the appropriate information to the department's Southeast Regional Office per 10 CSR 20-7.015(9)(E)2.
5. This construction permit is invalid for projects required to comply with the requirements contained in 10 CSR 20-4, "Grants and Loans"
6. Protection of drinking water supplies shall be in accordance with 10 CSR 20-8.120(10). "There shall be no physical connections between a public or private potable water supply system and a sewer, or appurtenance thereto which would permit the passage of any wastewater or polluted water into the potable supply. No water pipe shall pass through or come in contact with any part of a sewer manhole."

7. Sewers in relation to water works structures shall meet the requirements of 10 CSR 23-3.010 with respect to minimum distances from public water supply wells or other water supply sources and structures.
 - A. Sewer mains shall be laid at least 10 feet horizontally from any existing or proposed water main. The distances shall be measured edge-to-edge. In cases where it is not practical to maintain a 10 foot separation, the department may allow a deviation on a case-by-case basis, if supported by data from the design engineer. Such a deviation may allow installation of the sewer closer to a water main, provided that the water main is in a separate trench or on an undisturbed earth shelf located on either side of the sewer and at an elevation so the bottom of the water main is at least 18 inches above the top of the sewer. If it is impossible to obtain proper horizontal and vertical separation as described above for sewers, the sewer must be constructed of slip-on or mechanical joint pipe or continuously encased and be pressure tested to 150 pounds per square inch to assure water tightness.
 - B. Manholes should be located at least 10 feet horizontally from any existing or proposed water main.
 - C. Manholes shall be located with the top access at or above grade level.
 - D. Sewers crossing water mains shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer. The crossing shall be arranged so that the sewer joints will be equidistant and as far as possible from the water main joints. Where a water main crosses under a sewer, adequate structural support shall be provided for the sewer to maintain line and grade. When it is impossible to obtain proper vertical separation as stipulated above, one of the following methods must be specified:
 - a. The sewer shall be designed and constructed equal to the water pipe and shall be pressure tested to assure water tightness prior to backfilling; or
 - b. Either the water main or sewer line may be continuously encased or enclosed in a watertight carrier pipe which extends 10 feet on both sides of the crossing, measured perpendicular to the water main. The carrier pipe shall be of materials approved by the department for use in water main construction.
8. In addition to the requirements for a construction permit, 10 CSR 20-6.200 requires land disturbance activities of one acre or more to obtain a Missouri state operating permit to discharge stormwater. The permit requires best management practices sufficient to control runoff and sedimentation to protect waters of the state. Land disturbance permits will only be obtained by means of the department's ePermitting system available online at www.dnr.mo.gov/env/wpp/epermit/help.htm. See www.dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm for more information.

9. A United States (U.S.) Army Corps of Engineers (COE) permit (404) and a Water Quality Certification (401) issued by the department or permit waiver may be required for the activities described in this permit. This permit is not valid until these requirements are satisfied. If construction activity will disturb any land below the ordinary high water mark of jurisdictional waters of the U.S. then a 404/401 will be required. Since the COE makes determinations on what is jurisdictional, you must contact the COE to determine permitting requirements. You may call the department's Water Protection Program at 573-751-1300 for more information. See www.dnr.mo.gov/env/wpp/401/ for more information.
10. A full closure plan shall be submitted to the department's Southeast Regional Office for review and approval of any permitted wastewater treatment system being replaced. In accordance with 10 CSR 20-6.010(12), the closure plan must meet the requirements outlined in Standard Conditions Part III of the Missouri State Operating Permit No. MO- 0010043, Weiss Mobile Home Community Wastewater Treatment Plant. Closure shall not commence until the submitted closure plan is approved by the department. Form J – Request for Termination of a State Operating Permit, shall be submitted to the Water Protection Program for termination of any existing Missouri state operating permit, once closure is completed in accordance with the approved closure plan.
11. Upon completion of construction;
 - A. RAD Investments will become the continuing authority for operation, maintenance, and modernization of these facilities;
 - B. Submit the enclosed form Statement of Work Completed to the department in accordance with 10 CSR 20-6.010(5)(D);
 - C. Submit an electronic copy of the as builts if the project was not constructed in accordance with previously submitted plans and specifications; and
 - D. When the facility applies for their next operating permit renewal, they will be expected to include an updated facility description on their application.

III. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

The project is to expand the existing no-discharge land application site, MO-0119296, to handle the flows from the Weiss Mobile Home Community, MO-0110043. The Weiss Mobile Home Community has a three cell lagoon and is under a schedule of compliance to meet effluent limits on the discharge by November 1, 2016. The proposed project will eliminate the existing discharge.

2. FACILITY DESCRIPTION

The Weiss Lagoon is a single cell storage lagoon. The design flow of the facility is 41,600 gpd. The storage lagoon has 3.2 million gallons of storage available. The facility has 11.1 acres currently permitted for land application at the rate of 60 inches per year with sprinklers. The last inspection was in 2012 and was found to be in compliance. The operating permit is not being modified. The facility increased the land application to meet the requirements of the existing operating permit of land applying less than 100 days per year.

3. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

The pump station will have two ABS Piranha M25/2 D 3 phase grinder pumps. Each grinder pump has the capability of discharging 78 gpm at 38 feet of total dynamic head, which meets the design requirements of 58.6 gpm from the Weiss Mobile Home Community. The 58.6 gpm is based on peaking factor of 4 from the existing flow of 21,080 gpd. The wetwell in the pump station has a volume of 3,572 gallons or 61 minutes at peak flow.

The 1,822 lineal feet of 3 inch PVC SDR-21 forcemain has the velocity of 3.54 feet per second (fps) with one pump working and 7.08 fps with both pumps working at full capacity. The force main will have one air release/vacuum valve and shall be ARI Model D025P or equal.

There is no modification to the storage lagoon.

The existing Gorman Rupp 82H3-B pump will be utilized for distribution to the sprinklers. The pump is controlled by the existing control panel and timer. The distribution includes 7 sprinklers per zone with 5 zones, for a total of 35 sprinklers. The sprinklers will be Rain Bird 70 CH series. 21 of the sprinklers will be in new locations. The sprinklers will be set with a height 5 feet above existing grade and have a nozzle size of a quarter inch. There will be approximately 2,530 lineal feet of 4 inch PVC supply pipe constructed for the sprinkler system. Most of the existing Zone 4 will be replaced with new sprinklers and all of Zone 5 is new.

4. OPERATING PERMIT

Operating permit MO-0119296 will include an updated facility description in the next operating permit. The permitted design flow and land application field site did not change. The amount of land the facility is applying on increased but is still within the existing permitted acreage. There will be five zones of land application. With the connection of the forcemain from Weiss Mobile Home Community to the Weiss Lagoon, the Weiss Mobile Home Community treatment plant, MO-0110043 will need a closure plan submitted to the Southeast Regional Office.



MISSOURI DEPARTMENT OF NATURAL RESOURCES **RECEIVED**
 WATER PROTECTION PROGRAM
APPLICATION FOR CONSTRUCTION PERMIT # 4 2015
WASTEWATER TREATMENT FACILITY

Water Protection Program

MO-0119296 / 11-540
 CP0001785 C.15129

FOR DEPARTMENT USE ONLY	
APP NO.	CP NO.
FEE RECEIVED \$1000.00	CHECK NO. 251290
DATE RECEIVED 9/4/15	JB

APPLICATION OVERVIEW

The Application for Construction Permit – Wastewater Treatment Facility form has been developed in a modular format and consists of Part A and B. **All applicants must complete Part A.** Part B should be completed for applicants who currently land-apply wastewater or propose land application for wastewater treatment. **Please read the accompanying instructions before completing this form. Submittal of an incomplete application may result in the application being returned.**

PART A – BASIC INFORMATION

1.0 APPLICATION INFORMATION (Note – If any of the questions in this section are answered NO, this application may be considered incomplete and returned.)

- 1.1 Is this a Federal/State funded project? YES N/A Funding Agency: _____ Project #: _____
- 1.2 Has the Missouri Department of Natural Resources approved the proposed project's antidegradation review?
 YES Date of Approval: Unknown - Facility is currently permitted & in operation
- 1.3 Has the department approved the proposed project's facility plan*?
 YES Date of Approval: 07/15 NO N/A (If Not Applicable, complete No. 1.4.)
- 1.4 [Complete only if answered Not Applicable on No. 1.3.] Is a copy of the engineering report* for wastewater treatment facilities with a design flow less than 22,500 gpd included with this application?
 YES NO
- 1.5 Is a copy of the appropriate plans* and specifications* included with this application?
 YES Denote which form is submitted: Hard copy Electronic copy (See instructions.) NO
- 1.6 Is a summary of design* included with this application? YES NO
- 1.7 Has the appropriate operating permit application (A, B, or B2) been submitted to the department?
 YES Date of submittal: Unknown - Facility is currently permitted & in operation
 Enclosed is the appropriate operating permit application submittal. Denote which form: A B B2
 N/A Please explain: _____
- 1.8 Is the facility currently under enforcement with the department or the Environmental Protection Agency? YES NO
- 1.9 Is the appropriate fee included with this application? YES NO (See instructions for appropriate fee.)

* Must be affixed with a Missouri registered professional engineer's seal, signature and date.

2.0 PROJECT INFORMATION

2.1 NAME OF PROJECT

Weiss Lagoon & Weiss Mobile Home Community - Force Main & Land Application System Expansion

2.2 PROJECT DESCRIPTION

The construction of a new sanitary pump station, 1,822 lineal feet of 3' force main, and the expansion of the existing land application system from 4.3 acres to 10.66 acres will allow for the elimination of the existing three (3) stage Weiss Mobile Home Community wastewater treatment facility (MO-0110043). These improvements will re-route the wastewater flow from the northern portion of Weiss Park mobile home community currently tributary to the three (3) cell lagoon, to Weiss Lagoon and the land application system (MO-0119296).

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

Sludge storage is provided in the existing Weiss Lagoon. When necessary, sludge is disposed of by a contract hauler.

2.4 DESIGN INFORMATION

- A. Current population: 228; Design population: 621
- B. Actual Flow: 22,742 gpd; Design Average Flow: 41,600 gpd;
 Actual Peak Daily Flow: _____ gpd; Design Maximum Daily Flow: 45,520 gpd; Design Wet Weather Event: 10 year

2.5 ADDITIONAL INFORMATION

- A. Is a topographic map attached? YES NO
- B. Is a process flow diagram attached? YES NO

3.0 WASTEWATER TREATMENT FACILITY

NAME Weiss Lagoon		TELEPHONE NUMBER WITH AREA CODE (573) 335-3134	E-MAIL ADDRESS	
ADDRESS (PHYSICAL) 4459 N. High Street	CITY Jackson	STATE MO	ZIP CODE 63755	COUNTY Cape Girardeau

Wastewater Treatment Facility: Mo- 0119296 (Outfall 001 Of 1)

3.1 Legal Description: _____ 1/4, _____ 1/4, _____ 1/4, Sec. 30, T 32, R 13E
(Use additional pages if construction of more than one outfall is proposed.)

3.2 UTM Coordinates Easting (X): 796783 Northing (Y): 4147346
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

3.3 Name of receiving streams: Unnamed tributary to Hubble Creek

4.0 PROJECT OWNER

NAME RAD Investments		TELEPHONE NUMBER WITH AREA CODE (573) 335-3134	E-MAIL ADDRESS	
ADDRESS P.O. Box 1214	CITY Cape Girardeau	STATE MO	ZIP CODE 63702	

5.0 CONTINUING AUTHORITY: Permanent organization that will serve as the continuing authority for the operation, maintenance and modernization of the wastewater collection system.

NAME RAD Investments		TELEPHONE NUMBER WITH AREA CODE (573) 335-3134	E-MAIL ADDRESS	
ADDRESS P.O. Box 1214	CITY Cape Girardeau	STATE MO	ZIP CODE 63702	

5.1 A letter from the continuing authority, if different than the owner, is included with this application. YES NO N/A

5.2 COMPLETE THE FOLLOWING IF THE CONTINUING AUTHORITY IS A MISSOURI PUBLIC SERVICE COMMISSION REGULATED ENTITY.

A. Is a copy of the certificate of convenience and necessity included with this application? YES NO

5.3 COMPLETE THE FOLLOWING IF THE CONTINUING AUTHORITY IS A PROPERTY OWNERS ASSOCIATION.

A. Is a copy of the as-filed restrictions and covenants included with this application? YES NO

B. Is a copy of the as-filed warranty deed, quitclaim deed or other legal instrument which transfers ownership of the land for the wastewater treatment facility to the association included with this application? YES NO

C. Is a copy of the as-filed legal instrument (typically the plat) that provides the association with valid easements for all sewers included with this application? YES NO

D. Is a copy of the Missouri Secretary of State's nonprofit corporation certificate included with this application? YES NO

6.0 ENGINEER

ENGINEER NAME / COMPANY NAME Marc Mahnke / Strickland Engineering		TELEPHONE NUMBER WITH AREA CODE (573) 243-4080	E-MAIL ADDRESS mmahnke@stricklandengineering.com	
ADDRESS 113 W. Main Street	CITY Jackson	STATE MO	ZIP CODE 63755	

7.0 PROJECT OWNER: I hereby certify that I am familiar with the information contained in this application and to the best of my knowledge and belief such information is true, complete, and accurate, and if granted this permit, I agree to abide by the Missouri Clean Water Law and all rules, regulations, orders, and decisions, subject to any legitimate appeal available to applicant under Missouri Clean Water Law. I also understand the issuance of the construction permit does not guarantee the proposed wastewater treatment will meet the required effluent limitations of the issued Missouri State Operating Permit for this facility.

PROJECT OWNER SIGNATURE


PRINTED NAME
Larry Westrich

TITLE OR CORPORATE POSITION
Vice President

TELEPHONE NUMBER WITH AREA CODE
(573) 335-3134

E-MAIL ADDRESS
Larry.Westrich@DrurySouthwest.com

Mail completed copy to: MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
P.O. BOX 176
JEFFERSON CITY, MO 65102-0176

END OF PART A.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHETHER PART B NEEDS TO BE COMPLETE.

PART B – LAND APPLICATION ONLY

(Submit only if the proposed construction project includes land application of wastewater.)

8.0 FACILITY INFORMATION

8.1 Type of wastewater to be irrigated: Domestic State/National Park Seasonal business
 Municipal Municipal with a pretreatment program or significant industrial users
 Other (explain) _____

8.2 Months when the business or enterprise will operate or generate wastewater:
 12 months per year Part of the year (list months): _____

8.3 This system is designed for:
 No-discharge.
 Partial irrigation when feasible and discharge rest of time.
 Irrigation during recreational season, April – October, and discharge during November – March.
 Other (explain) _____.

9.0 STORAGE BASINS

9.1 Number of storage basins: 1 (Use additional pages if greater than three basins.)

9.2 Type of basins: Steel Concrete Fiberglass Earthen Earthen with membrane liner

9.3 Storage basin dimensions at inside top of berm (feet). Report freeboard as feet from top of berm to emergency spillway or overflow pipe.

Basin #1:	Length _____	Width _____	Depth <u>7.0'</u>	Freeboard <u>1.0'</u>	Depth <u>6.0'</u>	Safety <u>0.5'</u>	% Slope _____
Basin #2:	Length _____	Width _____	Depth _____	Freeboard _____	Depth _____	Safety _____	% Slope _____
Basin #3:	Length _____	Width _____	Depth _____	Freeboard _____	Depth _____	Safety _____	% Slope _____

9.4 Storage Basin operating levels (report as feet below emergency overflow level).
Basin #1: Maximum operating water level 0.5 ft Minimum operating water level 4.0 ft
Basin #2: Maximum operating water level _____ ft Minimum operating water level _____ ft
Basin #3: Maximum operating water level _____ ft Minimum operating water level _____ ft

9.5 Design depth of sludge in storage basins.
Basin #1: 2.0' ft Basin #2: _____ ft Basin #3: _____ ft

9.6 Existing sludge depth, if the basins are currently in operation.
Basin #1: _____ ft Basin #2: _____ ft Basin #3: _____ ft

9.7 Total design sludge storage: 6.2 dry tons and _____ cubic feet

10.0 LAND APPLICATION SYSTEM

10.1 Number of irrigation sites 1 Total Acres 11.1 Maximum % field slopes 14%
Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. 30 T 32 R 13E County 11.1 Acres
Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. _____ T _____ R _____ County _____ Acres
Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. _____ T _____ R _____ County _____ Acres
(Use additional pages if greater than three irrigation sites.)

10.2 Type of vegetation: Grass hay Pasture Timber Row crops
 Other (describe) _____

10.3 Wastewater flow (dry weather) gallons per day: Average annual 41,600 Seasonal _____ Off-season _____

10.4 Land application rate (design flow including 1-in-10 year storm water flows):
Design: 60 inches/year .25 inches/hour 1.0 inches/day 3.0 inches/week
Actual: 46.64 inches/year 0.12 inches/hour 0.47 inches/day _____ inches/week

10.5 Total irrigation per year (gallons): Design: 18,290,880 gal Actual: 13,505,000 gal

10.6 Actual months used for irrigation (check all that apply):
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

10.7 Land application rate is based on:
 Hydraulic Loading Other (describe) _____
 Nutrient Management Plan (N&P) If N&P is selected, is the plan included? YES NO



**STRICKLAND
ENGINEERING**

113 W. Main Street, Suite 1 Jackson, MO 63755

Tel. 573-243-4080 Fax 573-243-2191

www.stricklandengineering.com

September 1, 2015

MO Dept. of Natural Resources
Water Protection Program
Attn: Ms. Leasue Meyers, EIT
P.O. Box 176
Jefferson City, MO 65102-0176

RECEIVED
SEP 04 2015
Water Protection Program

RE: Weiss Lagoon & Weiss Mobile Home Community Lagoon

Dear Ms. Meyers:

Attached is the Application for Construction permit, one set of the construction plans, the summary of design including the construction specifications and the \$1,000 application fee for the above referenced project. Electronic versions of each of the items will be emailed to you as well.

Please contact me if you have any questions or need any further information.

Sincerely,


Marc T Mahnke, PE

Enclosures

